



CAR AUDIO AMPLIFIERS

OWNER'S MANUAL

**GFA-4302
GFA-4402
GFA-4304
GFA-4404
GFA-4702**

IMPORTANT:

Be sure to connect the
POWER and **GROUND**
correctly! Warranty *will* be
affected if the amplifier is
incorrectly connected!

INSTALLATION ADVISORY: Clipped strands
of power or speaker wire could enter the
amplifier through the Free-Flow perforated
sleeve. Be sure to clip wires well away from
the amplifier to avoid this possibility

OWNER'S MANUAL

Congratulations! And thank you for choosing ADCOM Car Audio Amplifiers for your mobile sound system. Your ADCOM Car Audio Amplifier uses superior engineering principles and the highest quality components to provide a musical experience with clarity and dynamics *never* before achieved in a vehicle.

PLEASE read this manual **entirely** before attempting to install this product. Due to the sophisticated nature of this equipment, we highly recommend using an authorized ADCOM Car Audio Dealer to achieve the maximum performance from your mobile sound system! Your warranty is affected if you choose to install your ADCOM amplifier yourself. **You will only receive all the benefits of the limited warranty if the amplifier is professionally installed by an authorized ADCOM Car Audio Dealer!** Please refer to your warranty card for further details.

	GFA-4302	GFA-4402	GFA-4304	GFA-4404	GFA-4702
Power Output 4 Ohms Stereo	30 W/Ch @ <0.1% THD*	40 W/Ch @ <0.1% THD*	30 W/Ch @ <0.1% THD*	40 W/Ch @ <0.1% THD*	70 W/Ch @ <0.1% THD*
Power Output 2 Ohms Stereo	60 W/Ch. @ <0.25% THD*	80 W/Ch. @ <0.25% THD*	60 W/Ch. @ <0.25% THD*	80 W/Ch. @ <0.25% THD*	140W/Ch. @ <0.2% THD*
Power Output 4 Ohms Mono	100 Watts @ <0.25% THD*	140Watts @ <0.25% THD*	110Watts @ <0.25% THD*	150Watts @ <0.25% THD*	250Watts @ <0.2% THD*
Frequency Response	0Hz-50KHz +0dB, -3dB	0Hz-50KHz +0dB, -3dB	0Hz-50KHz +0dB, -3dB	0Hz-50KHz +0dB, -3dB	0Hz-50KHz +0dB, -3dB
Power Bandwidth	0Hz-50KHz +0dB, -3dB	0Hz-50KHz +0dB, -3dB	0Hz-50KHz +0dB, -3dB	0Hz-50KHz +0dB, -3dB	0Hz-50KHz +0dB, -3dB
Input Impedance	8.5 K Ohms	8.5 K Ohms	8.5 K Ohms	8.5 K Ohms	8.5 K Ohms
Input Sensitivity	400mV to 2V	400mV to 2V	400mV to 2V	400mV to 2V	600mV to 2V
Separation	>90 dB	>90 dB	>90 dB	>90 dB	>90 dB
S/N Ratio	>100 dB	>100 dB	>100 dB	>100 dB	>100 dB
Damping Factor	350	600	350	600	600
Idle Current	3 Amps	3 Amps	6 Amps	9 Amps	10 Amps
Fuse Size	20 Amp	30 Amp	50 Amp	50 Amp	50 Amp
Weight	8 lbs (3.7kg)	10 lbs (4.6kg)	12 lbs (5.5kg)	19 lbs (8.7kg)	32 lbs (14.6kg)
Dimensions in Inches	9.75x10.75x2.3" WxLxH	9.75x12.76x2.3" WxLxH	9.75x14.76x2.3" WxLxH	9.75x24.25x2.3" WxLxH	9.75x24.25x2.3" WxLxH

* THD Ratings measured between 20Hz and 20khz

HOW TO USE THIS MANUAL

This manual is divided into three distinct sections:

Section 1: Common features, instructions and connections for *all* ADCOM Car Audio amplifiers.

Section 2: Installation instructions for the **GFA-4302** and **GFA-4402** (These amplifiers use RCA type input connections)

Section 3: Installation instructions for the **GFA-4304**, **GFA-4404** and **GFA-4702** (These amplifiers use 5-pin XLR type input connections)

In Sections 2 and 3 there are diagrams to help install ADCOM Car Audio amplifiers in the most popular configurations. **If a more extensive installation is required, it is recommended that your authorized ADCOM Car Audio dealer perform the installation.** Technical support is available in our Customer Service department by calling (908) 390-1130 9am to 5pm EST.

SECTION 1: Common Features

UNPACKING:

Below is a list of what is included with each model amplifier:

GFA-4302 and GFA-4402

1 Amplifier
1 Owner's Manual
1 Warranty Card
1 In Line Fuse Holder
2 RCA Shorting Plugs

GFA-4304 and GFA-4404

1 Amplifier
1 Owner's Manual
1 Warranty Card
1 In Line Fuse Holder
2 GFY-4 XLR/RCA Adapters

GFA-4702 (Amp Section)

1 Amplifier Section
1 Owner's manual
1 GFY-4 XLR/RCA Adapter

GFA-4702 (Power Supply)

1 Power Supply Section
1 Warranty Card
1 GFC-1 Power Cable

If anything is missing from your carton, please contact your dealer or call us directly. Be sure to verify that the serial number printed on the bottom of the amplifier is the same as the serial number on the carton. If either number is missing or altered, you should contact ADCOM immediately at **(908) 390-1130**. Before each ADCOM Car Amplifier leaves our facility in New Jersey, it is carefully inspected for physical imperfections and electrical performance as a routine part of ADCOM's Quality Assurance system. This is to ensure flawless performance and appearance when you receive it.

After you have unpacked your amplifier, inspect it for physical damage. In the unlikely event that damage has occurred during shipping, a freight claim to cover shipping damage can be initiated. **THE RIGHT A TO CLAIM AGAINST A PUBLIC CARRIER CAN BE FORFEITED IF THE CARRIER IS NOT NOTIFIED PROMPTLY AND IF THE SHIPPING CARTON AND PACKING MATERIAL ARE NOT AVAILABLE FOR INSPECTION. SAVE ALL PACKING MATERIAL UNTIL THE CLAIM HAS BEEN SETTLED.**

MOUNTING:

All audio components in a vehicle should be securely mounted, as they could become airborne in the event of a collision; **Serious injury could occur.** ADCOM Car Audio amplifiers may be mounted almost anywhere; every model is fan-cooled, so mounting possibilities are limited only by your imagination. Follow these simple guidelines to ensure long life, cosmetic integrity and sonic dependability: 1. Always securely mount the component to a flat surface using all mounting holes. 2. Never mount an audio component where loose objects can come in contact with it. 3. Never mount an amplifier under a rug, mat or carpet. **Remember, the better the ventilation, the less chance your amp will thermally shut down!**

When mounting, do not use the amplifier as a drilling template. Use as a marking template, only. When mounting an amplifier, use only Pan-Head screws, not beveled head, and **DO NOT OVER-TIGHTEN!**

Pan Head Screw



CONNECTING POWER:

ADCOM amplifiers are designed to be used with 12 Volt, negative-ground vehicles. **The first step is to disconnect the Ground(-) battery terminal!** The positive and negative gold-plated power connectors on the amplifier will accommodate up to 6AWG wire. 8AWG cable is the standard gauge and will fit *with* the insulation into the power connectors. If more than one amp is being installed, use 4AWG from the battery to a power distribution block. Run 8AWG from the distribution block to each amplifier. All ground connections should be as short as practically possible and terminated at the same location. A fuse or protection device **MUST** be in the +12 Volt power cable within 18" of the battery. It should also be readily accessible. An additional fuse holder may be located within 18" of the amplifier or power distribution block. **The fuse near the battery is to protect your vehicle. An optional fuse near the amplifier is to help protect the amplifier!** When a fuse blows, replace **ONLY** with an identical amperage fuse!

Connect the IGN terminal on the amplifier to the source unit's power antenna, remote or amp-turn-on lead. When the source is turned on, it supplies 12 volts to the IGN, which turns the amplifier on. **If two or more components are being turned on by the remote lead, it is suggested to "relay" the turn on.** (see Fig. 1) Here, the relay (Bosch 0-322-204-150 or P&B VF4-45F11) is triggered by the remote lead which sends current to the IGN connections. This is considered a good installation technique and a SPDT relay is readily available from most installation shops.

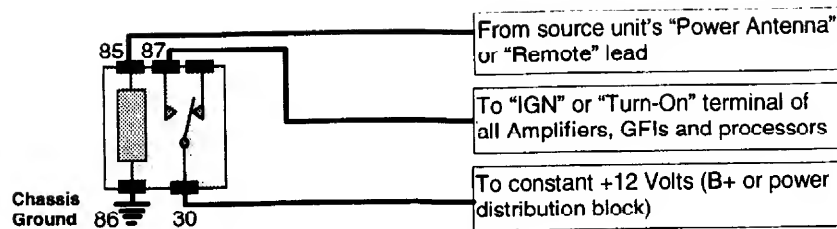


Fig. 1

SPEAKER CONNECTIONS:

ADCOM uses gold-plated speaker connectors that will accommodate up to 8AWG speaker wire. Standard speaker wire gauge is 12AWG to 16AWG and will fit easily into the terminals. Be sure there are no frayed or loose wire strands that may end up touching other wires. Speaker polarity is clearly marked; special attention must be taken while connecting speakers. **Speaker polarity is essential to proper amplifier operation!**

Any number of speakers may be used with your ADCOM Car Audio amplifier. The "system impedance" is dependent on the wiring configuration and selection of speakers. Although ADCOM amplifiers are stable into loads of less than $\frac{1}{2} \Omega$, continuous operation into impedances lower than 2Ω may eventually lead to thermal overload, causing the amplifier to shut down until it cools off. Your authorized ADCOM Car Audio dealer is best able to maximize the performance of your system by calculating impedance and ensuring the proper connection of all system components.

MoSt™ CONFIGURATION:

ADCOM Car Audio amplifiers are capable of running stereo and mono configurations simultaneously. In order to achieve this, one channel must be inverted *at the input*. Inverting simply means making the positive lead negative, and the negative lead positive. For consistency, we recommend that the "B" or "RIGHT" channel be inverted. In addition, the same channel's *output* must be inverted to complete the process. Inverting techniques will be discussed in sections 2 and 3.

INPUT SENSITIVITY SETTING:

Located on the end panel, along with the input connectors, are two small openings that house the *input sensitivity controls*. **THEY ARE NOT AMPLIFIER VOLUME CONTROLS!** When properly set, they match the output of the source unit with the input of the amplifier. If you wish to have the amplifier

and source unit properly matched, consult your authorized ADCOM Car Audio dealer.

Optimal performance and the advantages of "passively terminated balanced" inputs are realized when sensitivity controls are turned *fully clockwise*. Since the sensitivity controls affect only the positive inputs, the controls **MUST** be *fully clockwise* in the MoSt™ or mono configurations.

CARE AND CLEANING:

Great care has been taken by ADCOM to assure that your amplifier is as flawless in appearance as it is electrically. In the event that your ADCOM amplifier needs cleaning, use a damp cloth or dry, soft bristled paint brush. Do not use cleaning fluids of any kind as damage to the finish may result. Treat this product as a precision instrument, and it will provide you with many years of musical enjoyment.

If you experience any problems with your ADCOM Car Audio amplifier, please contact your local authorized dealer or call ADCOM Customer Service at (908) 390-1130 between 9am and 5pm EST. Ask for Technical Assistance for car audio.

SECTION 2: RCA Input Amps

INPUT SECTION:

It may seem unusual to find 4 RCA inputs on a 2 channel amplifier, but that is just what you will find when you inspect the ADCOM **GFA-4302** or **GFA-4402** amplifiers. Channel "A" is the "LEFT" and channel "B" is the "RIGHT". The inputs on the left side are the (+)positive inputs and the inputs on the right side are the (-) negative inputs. *If you wish to run these amplifiers in the Balanced mode, it is **strongly** suggested that an authorized ADCOM Car Audio dealer handle this installation!*

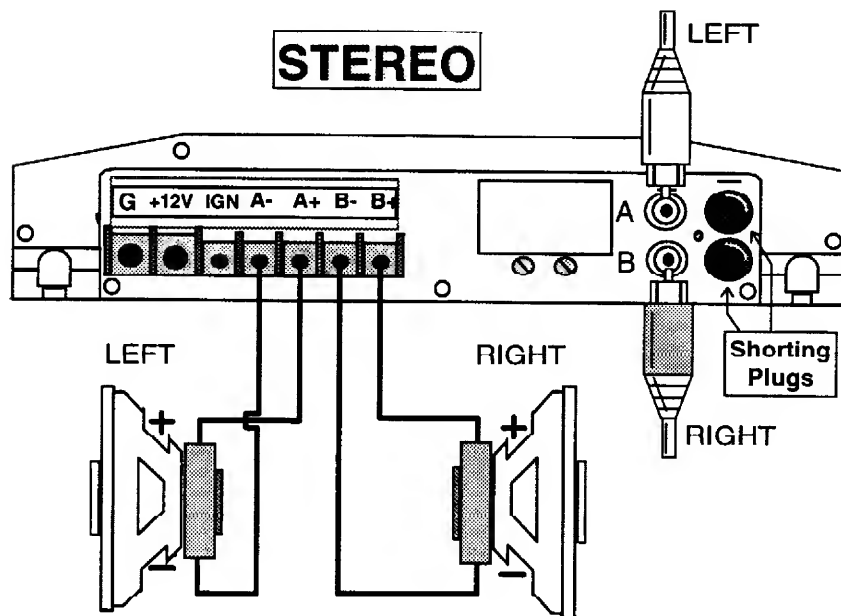
There are two ways to run RCAs into these amplifiers. For stereo operation, RCAs connect to the left-most input jacks, labeled A+ and B+. When using the amplifier in either a bridged Mono or MoSt™ configuration, the upper left and lower right inputs, labeled A+ and B-, are used. **Always insert the included RCA Shorting Plugs into unused RCA inputs!**

WIRING DIAGRAMS:

There are 3 basic wiring schemes for the **GFA-4302** and **GFA-4402**; they are as follows:

1. Stereo
2. Mono
3. MoSt™ (Mono/Stereo simultaneously)

In the **Stereo mode**, the RCA interconnect cables connect to the Amplifier as follows: The left cable to A+ input and the right cable to B+ input. Speakers hook up normally: "A+" and "A-" outputs to LEFT speaker(s) (+)pos & (-)neg, and "B+" and "B-" outputs to the RIGHT speaker(s) (+)pos & (-)neg. See Fig.2. **Remember to insert the RCA Shorting Plugs in the unused inputs.**

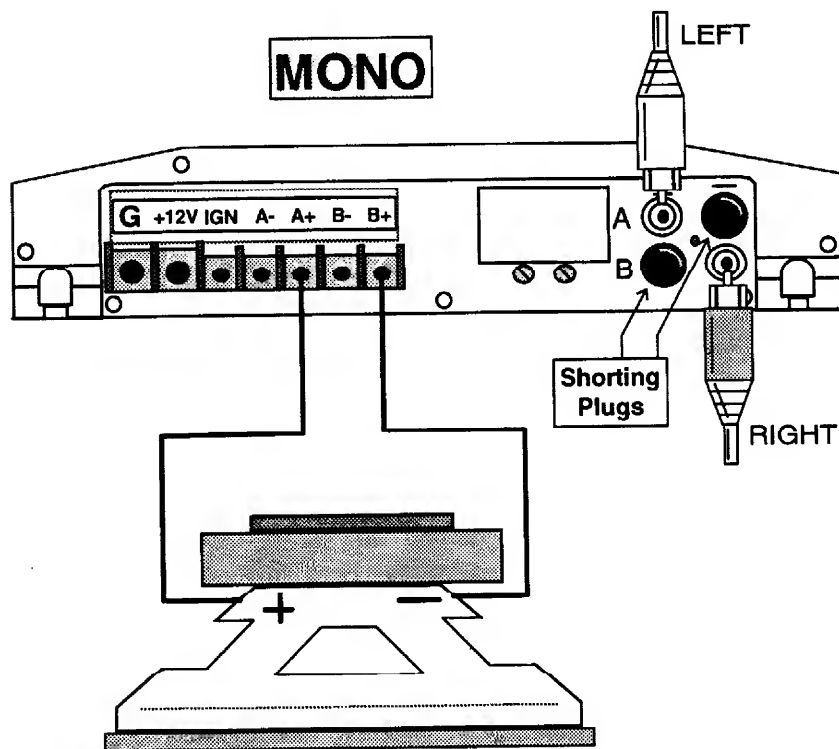


BE CERTAIN OF POWER/GROUND CONNECTIONS

Fig. 2

In the Mono mode, the LEFT RCA cable connects to A+ input, the RIGHT RCA cable connects to B- input. **Remember to insert the RCA Shorting Plugs in the unused inputs.** The speaker outputs connect to the speaker as follows: A+ output connects to the Positive(+) speaker terminal; B+ output connects to the Negative(-) speaker terminal (see Fig. 3).

ADCOM car audio amplifiers are stable driving a 1 Ohm mono load, but it is not recommended. *For best results (maximum SPL and low THD), we suggest a 2 or 4 Ohm mono load.*

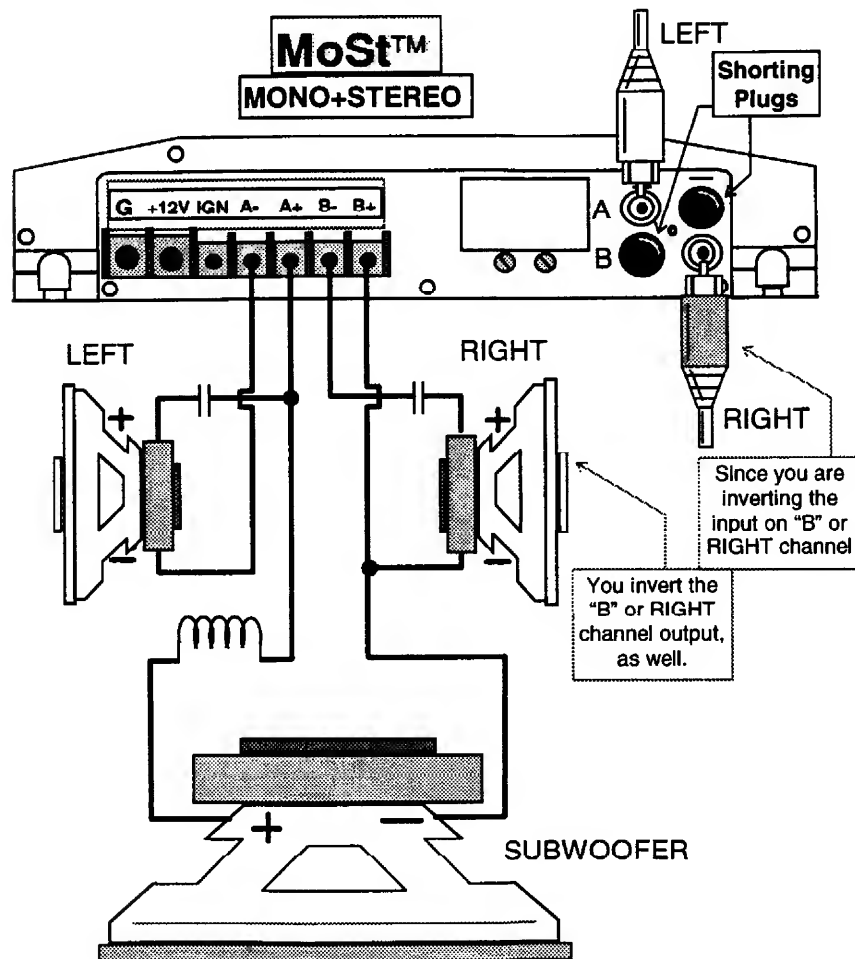


BE CERTAIN OF POWER/GROUND CONNECTIONS

Fig. 3

In the MoSt™ configuration, the amplifier is capable of driving multiple pairs of stereo speakers (properly crossed-over), and multiple mono subwoofers, *simultaneously!*

To wire the MoSt™ configuration, connect the LEFT RCA to the A+ input; connect the RIGHT RCA to the B- input. **Remember to Insert the RCA Shorting Plugs in the unused inputs.** Wire speakers as shown in Fig. 4.



BE CERTAIN OF POWER/GROUND CONNECTIONS

Fig. 4

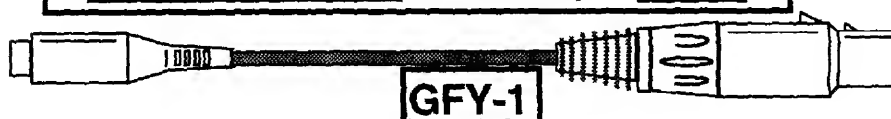
SECTION 3: XLR Input Amps

For consistency, we suggest you use channels A and B (left most 5-pin XLR) for Front Left and Right, and use channels C and D (right most 5-pin XLR) for Rear Left and Right.

The **GFA-4304**, **GFA-4404** and the **GFA-4702** all use balanced inputs terminated with professional 5-pin XLR connectors. Each 5-pin XLR connects two channels (Left and Right) of signal, plus a shield to the amplifier. Hookup is straight-forward, but you must select the correct GFY adapter. The following diagrams (Fig. 5), are a listing of all the adapters available through ADCOM for integrating any system with ADCOM car audio amplifiers and interfaces. **It is vital to note the APPLICATION description! Specific adapters MUST be used for specific applications!**

➤ GFY ADAPTER CABLES ◀

APPLICATION: Adapts XLR(2 ch.) input to accept mono RCA-type input and run amp in MONO



APPLICATION: Use to connect GFI-4600 output (via GFX-2.5 or 20) to RCA-type input of amplifier



Fig. 5 (part 1)

➤ GFY ADAPTER CABLES ◀

continued

APPLICATION: Adapt XLR(2 ch.) input to accept stereo RCA-type input and run in MONO or MoSt™ configuration.
**Right channel is inverted.



APPLICATION: Adapts XLR(2ch.) input to RCA-type source to run in STEREO



APPLICATION: Converts a 4-channel ADCOM amp to a Bridged 2-channel amp (via GFX-2.5 or 20)

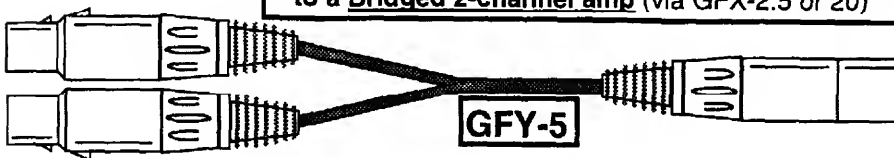


Fig. 5 (part 2)

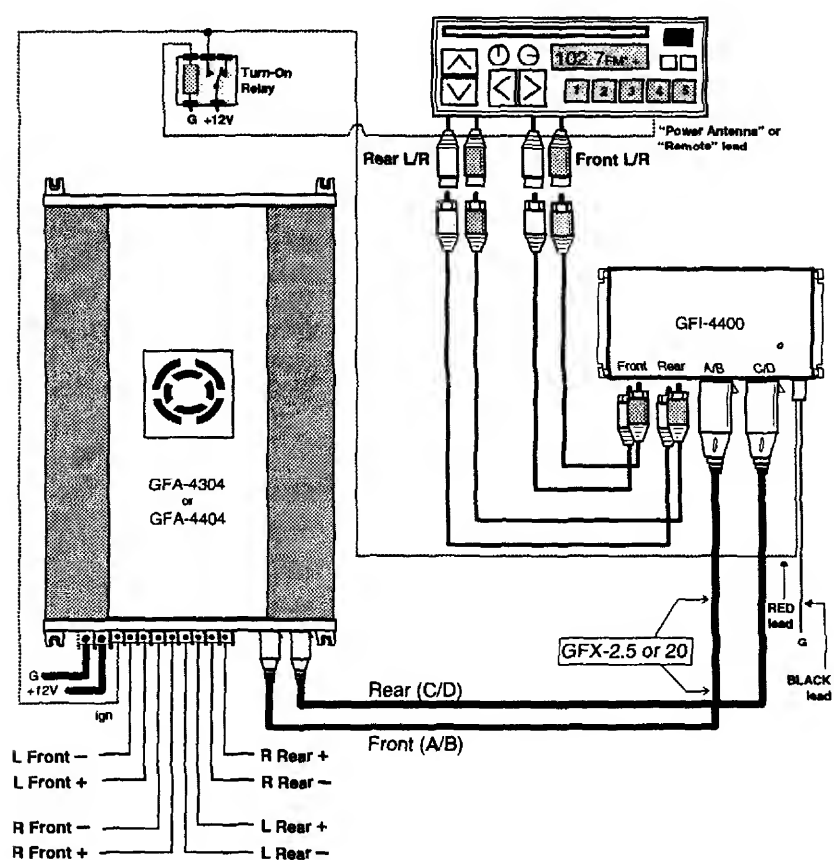
WIRING DIAGRAMS:

There are 9 wiring diagrams displayed on the following pages. Six are basic single-amplifier wiring schemes, while one is a 2-amplifier, 5-channel configuration using a **GFA-4600** crossover/interface. Two are **GFA-4702** wiring schemes including the power cable connections.

There are many more possibilities using ADCOM car audio amplifiers, but these are the most widely used configurations. Remember, the MoSt™ configuration may be combined with any other diagram to utilize the full potential of ADCOM car audio amplifiers. **If you have any questions or confusion regarding these diagrams, PLEASE contact an authorized ADCOM Car Audio Dealer or ADCOM Customer Service for technical assistance.** A listing of the diagrams follows:

- | | |
|---------|--|
| Fig. 6 | <u>4-channels</u> Stereo with GFI-4400 |
| Fig. 7 | <u>4-channels</u> Stereo without GFI-4400 or GFI-4600 |
| Fig. 8 | <u>3-channels:</u> 2-channels Stereo + 1-channel Mono with GFI-4600 |
| Fig. 9 | <u>3-channels:</u> 2-channels Stereo + 1-channel Mono without GFI-4400 or GFI-4600 |
| Fig. 10 | <u>2-channels</u> Stereo with GFI-4600 |
| Fig. 11 | <u>2-channels</u> Stereo without GFI-4400 or GFI-4600 |
| Fig. 12 | <u>5-channel, 2-amp</u> (XLR 4-channel and RCA 2-channel) with GFI-4600 |
| Fig. 13 | <u>2-channel</u> Stereo GFA-4702 without GFI-4400 or GFI-4400 |
| Fig. 14 | <u>1-channel</u> Mono GFA-4702 with GFI-4600 |

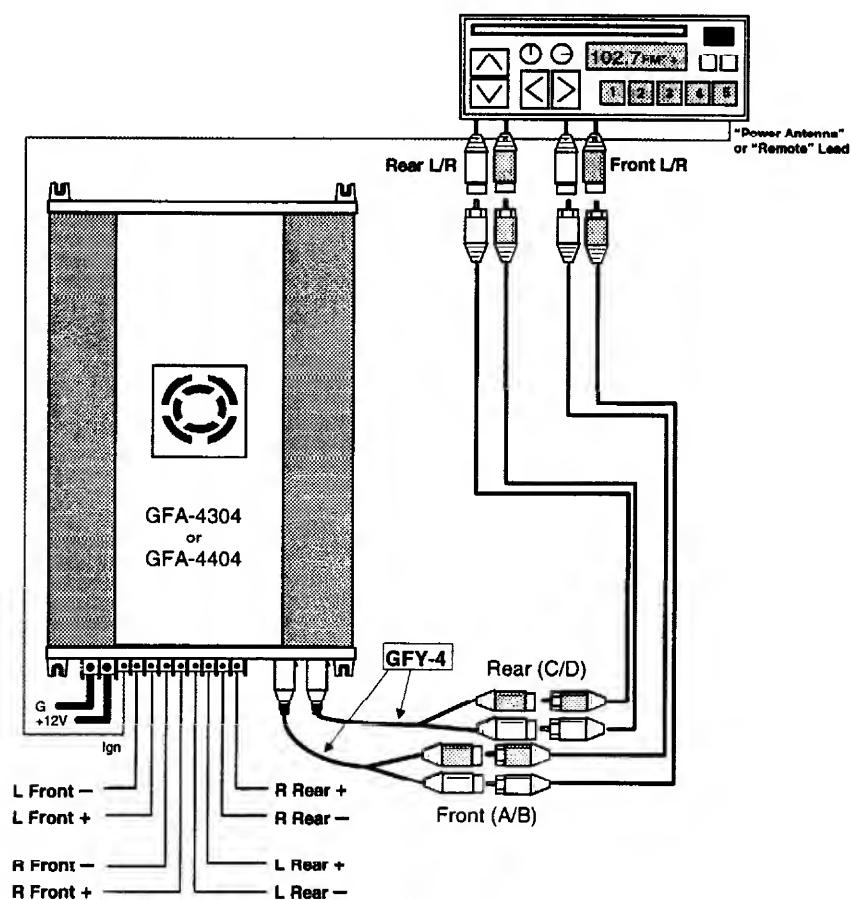
Front/Rear Stereo (4 Ch.) with GFI-4400



BE CERTAIN OF POWER/GROUND CONNECTIONS

Fig. 6

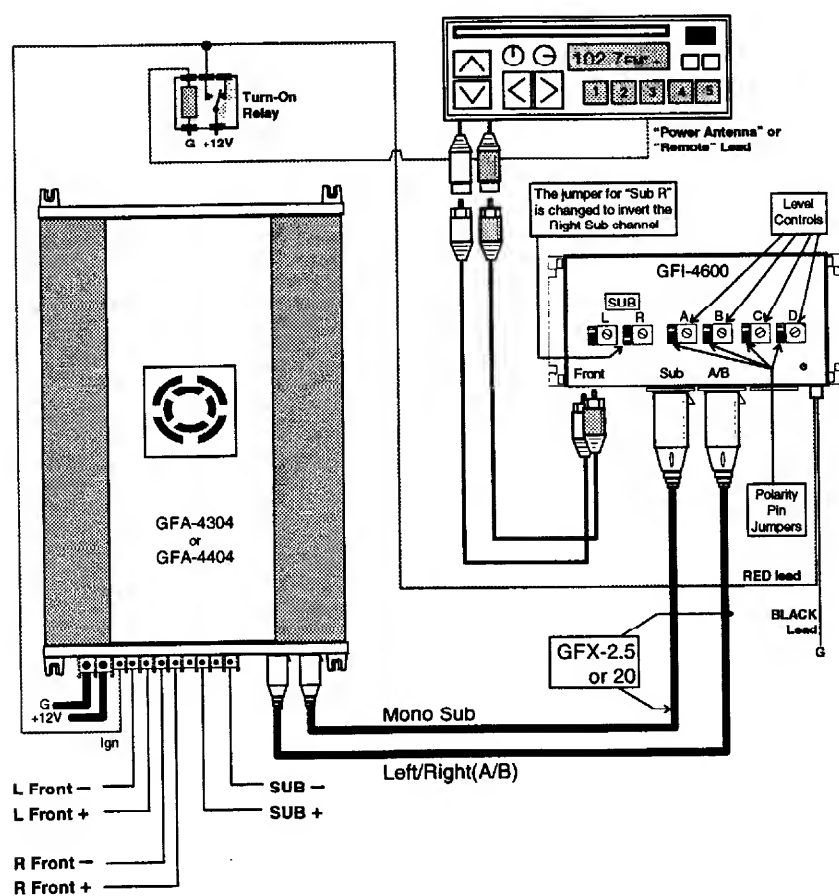
Front/Rear Stereo (4 Ch.) without GFI-4400



BE CERTAIN OF POWER/GROUND CONNECTIONS

Fig. 7

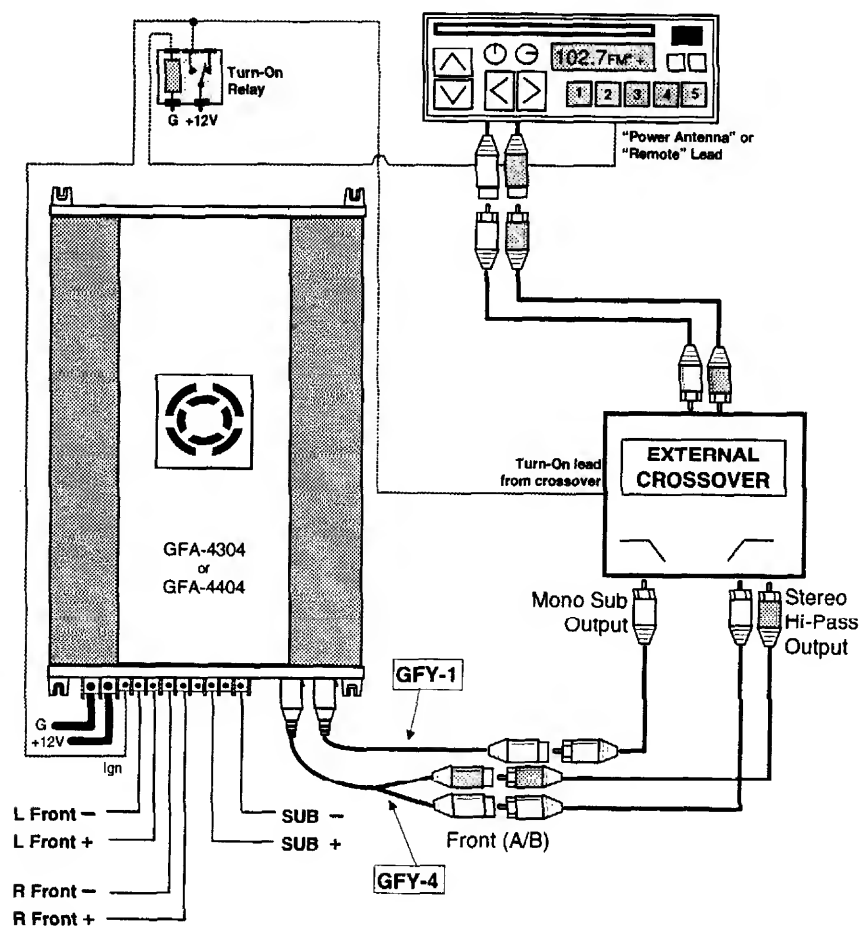
Front Stereo/Mono Sub (3 Ch.) with GFI-4600



BE CERTAIN OF POWER/GROUND CONNECTIONS

Fig. 8

Front Stereo/Mono Sub (3 Ch.) without GFI-4600

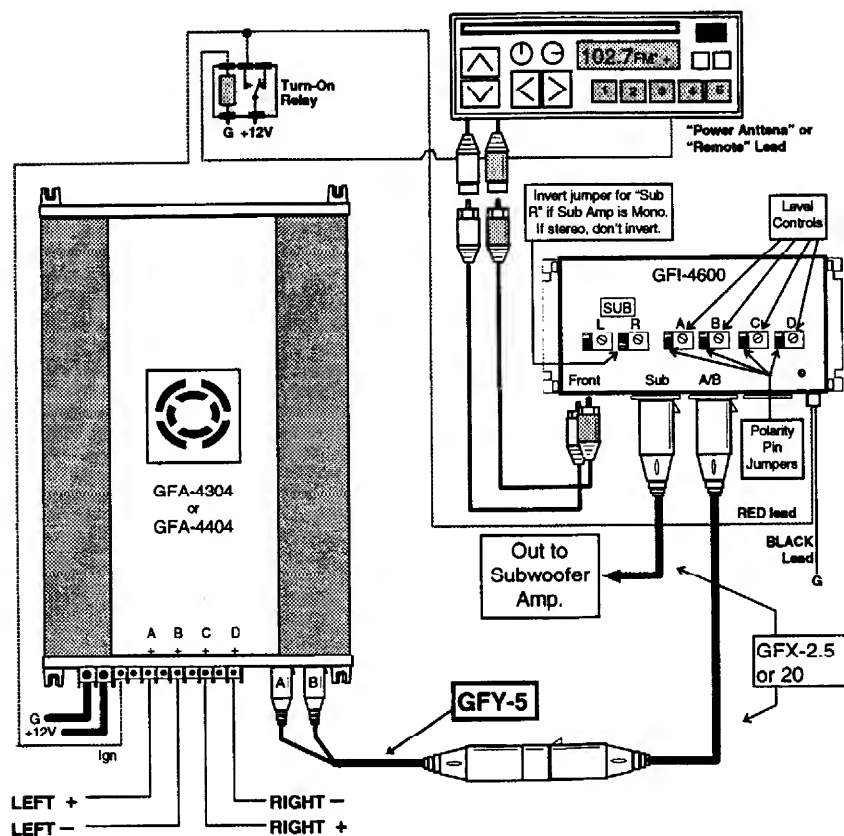


BE CERTAIN OF POWER/GROUND CONNECTIONS

Fig. 9

Stereo (2 Ch.) with GFI-4600

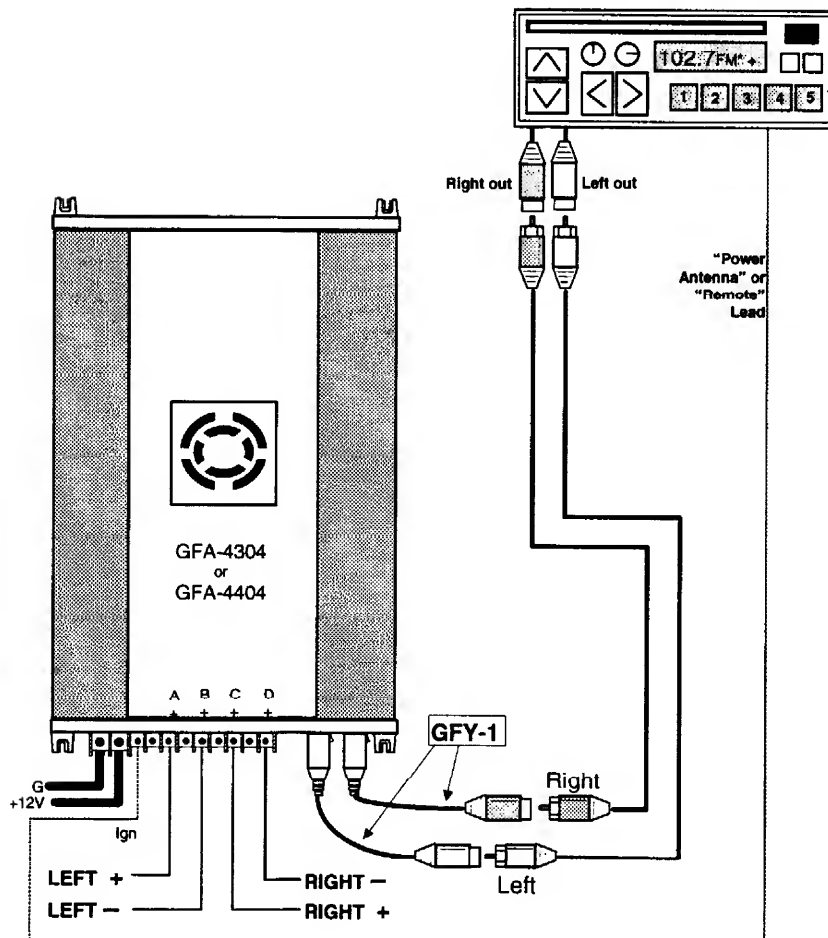
Displayed as a Stereo *Mids/Highs* amp; Can be used as Stereo *Subwoofer* amp, also.



BE CERTAIN OF POWER/GROUND CONNECTIONS

Fig. 10

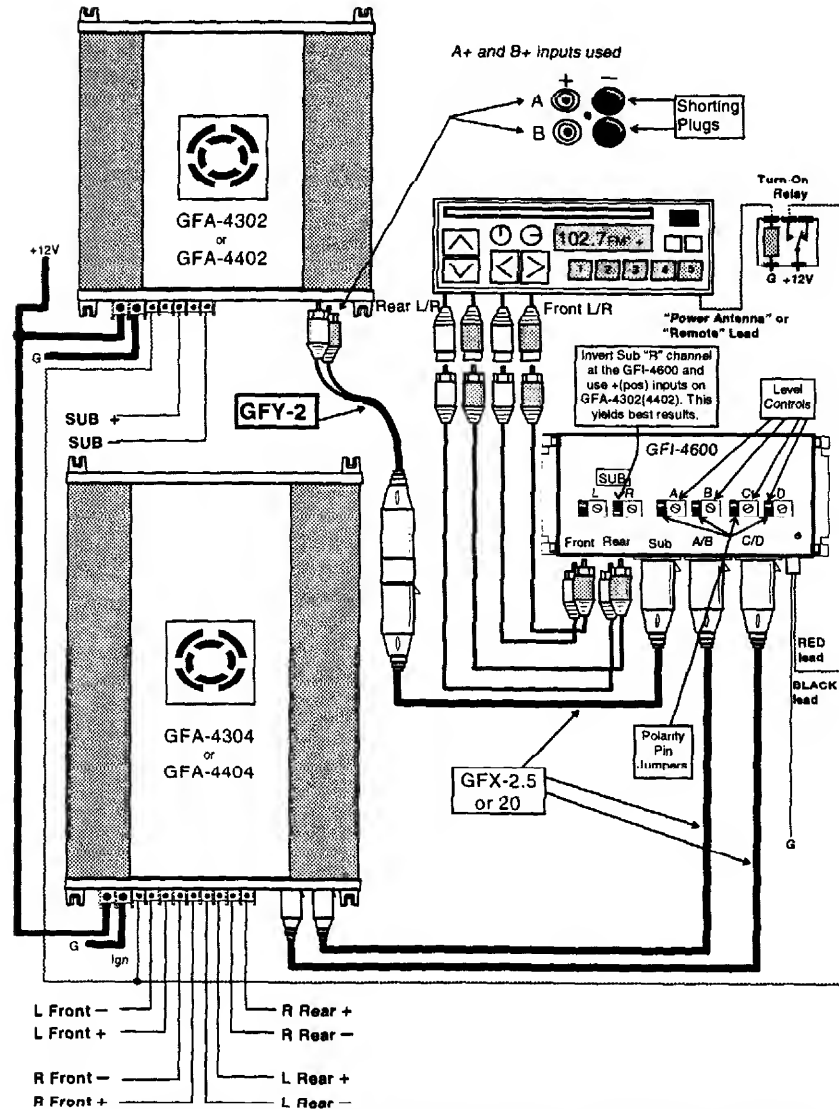
Stereo (2 Ch.) without GFI-4600



BE CERTAIN OF POWER/GROUND CONNECTIONS

Fig. 11

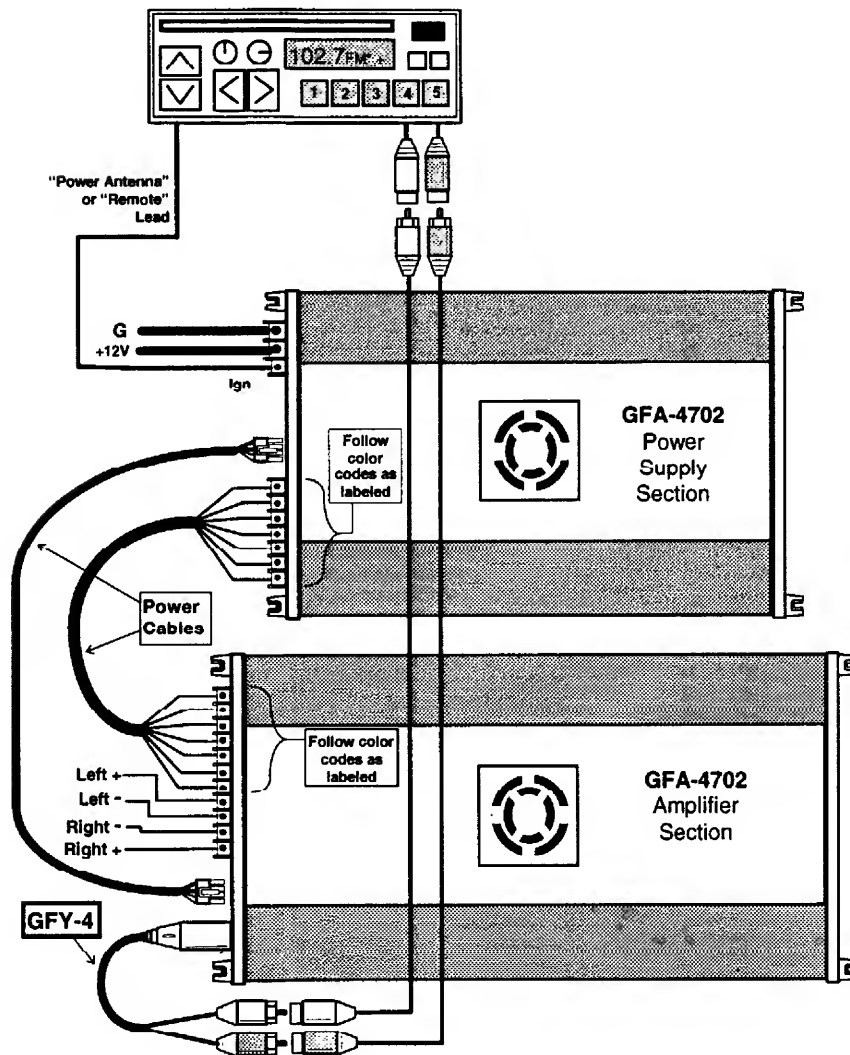
Multi-Amp System using XLR and RCA **with GFI-4600**



BE CERTAIN OF POWER/GROUND CONNECTIONS

Fig. 12

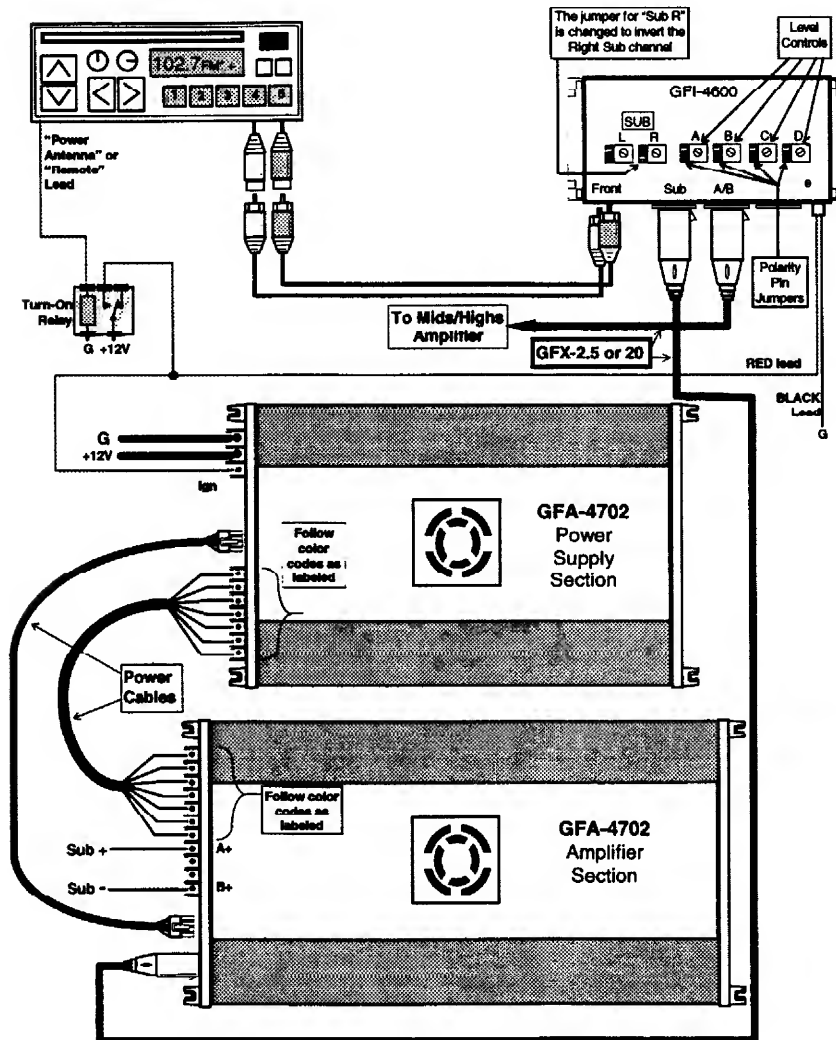
GFA-4702 2-Channel without GFI-4400 or 4600



BE CERTAIN OF POWER/GROUND CONNECTIONS

Fig. 13

GFA-4702 1-Channel (Mono) with GFI-4600



BE CERTAIN OF POWER/GROUND CONNECTIONS

Fig. 14

AVAILABLE ACCESSORIES

ADAPTERS:

GFY-1	Adapts XLR Input to Mono RCA-type Input
GFY-2	Adapts XLR Output from GFI-4600 to RCA-type Input of Amplifier
GFY-3	Adapts XLR Input to RCA-type Input to operate Amplifier in the MoSt™ (or Mono) Configuration
GFY-4	Adapts XLR Input to RCA-type Input to operate Amplifier in Stereo
GFY-5	Converts 4-Channel ADCOM Amplifier to operate as a 2-Channel Amplifier

CABLES & MISCELLANEOUS:

GFX-2.5	30" 5-Pin Female XLR to XLR 2-Channel Extension Cable (GFI to GFA)
GFX-20	20' 5-Pin Female XLR to XLR 2-Channel Extension Cable (GFI to GFA)
GFX-100	100' roll of 5 Conductor Shielded Cable
GXL-F	Female 5-Pin XLR Connector
GXL-M	Male 5-Pin XLR Connector
GXL-R	Right-Angle Female XLR 5-Pin Connector
GFC-5	5' Power Interface Cable for GFA-4702
GFC-20	20' Power Interface Cable for GFA-4702
GFM-xx	Crossover Resister Modules for GFI-4600 (xx denotes frequency: 50, 60, 70, 85, 120, 150, 180, 200, 270, 400, 600 and 3350 Hz)



11 Elkins Road
E. Brunswick, NJ 08816
Phone (908) 390-1130
Fax (908) 390-5657

Copyright 1994
©Adcom Car Audio, Inc.
All Rights Reserved